

Claims

What is claimed is:

1. A hydraulic system comprising:
  - a source of high pressure fluid and a low pressure reservoir;
  - an actuator control valve including a valve body defining a high pressure passage fluidly connected to said source of high pressure fluid, a low pressure passage fluidly connected to said low pressure reservoir and a device control passage;
  - said actuator control valve being movable between a first position in which said device control passage is open to said low pressure passage, and a second position in which said device control passage is open to said high pressure passage; and
  - said device control passage being fluidly connected to at least one of a first hydraulic device and a second hydraulic device.
2. The hydraulic system of claim 1 wherein said first hydraulic device is a hydraulically actuated fuel injector.
3. The hydraulic system of claim 1 wherein said second hydraulic device is an engine compression release brake.
4. The hydraulic system of claim 1 wherein said actuator control valve includes an electrical actuator and at least one valve member operably coupled to said at least one electrical actuator.
5. The hydraulic system of claim 1 wherein said actuator control valve includes a pilot operated spool valve member.

6. The hydraulic system of claim 1 wherein said first hydraulic device includes a direct control needle valve having a closing hydraulic surface exposed to fluid pressure in a pressure communication passage.

7. The hydraulic system of claim 1 wherein a two way valve is positioned between said actuator control valve and one of said first hydraulic device and said second hydraulic device; and

    said valve is movable between an open position and a closed position.

8. The hydraulic system of claim 1 wherein said first hydraulic device includes an intensifier piston; and

    said intensifier piston includes a hydraulic surface exposed to fluid pressure in an actuation fluid passage fluidly connected to said device control passage.

9. An engine comprising:

    an engine housing defining a plurality of cylinders;

    an actuator control valve for each of said cylinders attached to said engine housing, said actuator control valve including a valve body that defines a device control passage, a high pressure passage and a low pressure passage;

    an electronic control module being in control communication with said actuator control valve;

    a first hydraulic device and a second hydraulic device for each of said plurality of cylinders being attached to said engine housing;

    a source of high pressure fluid being fluidly connected to said high pressure passage;

    a low pressure reservoir being fluidly connected to said low pressure passage; and

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said actuator control valve being movable between a first position in which said device control passage is open to said low pressure passage and a second position in which said device control passage is open to said high pressure passage.

10. The engine of claim 9 wherein said first hydraulic device is a fuel injector including an injector body that defines an actuation fluid passage in fluid communication with said device control passage.

11. The engine of claim 10 wherein a two way valve is positioned between said actuator control valve and said second hydraulic device; and

      said two way valve is movable between an open position and a closed position.

12. The engine of claim 11 wherein said second hydraulic device is an engine compression release brake.

13. The engine of claim 12 wherein said engine compression release brake includes a brake body that defines a brake fluid passage; and

      said brake fluid passage is fluidly connected to said high pressure source by said device control passage when said actuator control valve is in said second position.

14. The engine of claim 13 wherein a direct control needle valve is positioned in said injector body that is movable between a closed position and an open position; and

      said direct control needle valve includes a closing hydraulic surface exposed to fluid pressure in a pressure communication passage.

15. The engine of claim 14 including a needle control valve member is positioned in said injector body and being movable between a downward position opening said pressure communication passage to said actuation fluid passage and an upward position blocking said pressure communication passage from said actuation fluid passage.

16. The engine of claim 15 wherein said direct control needle valve includes an opening hydraulic surface exposed to fluid pressure in a nozzle chamber defined at least in part by said injector body.

17. A method of operating a fuel injector and an engine compression release brake, comprising the steps of:

connecting an engine compression release brake and a fuel injector to an actuator control valve;

actuating said engine compression release brake at least in part by activating said actuator control valve and disabling said fuel injector; and

actuating said fuel injector at least in part by activating said actuator control valve.

18. The method of claim 17 wherein said step of disabling said fuel injector includes a step of holding a needle valve in a position that closes a nozzle outlet of said fuel injector.

19. The method of claim 17 wherein said step of actuating said fuel injector includes a step of relieving pressure on a closing hydraulic surface of said needle valve.

20. The method of claim 17 wherein said step of activating said actuator control valve includes a step of moving a pilot valve member from a first position to a second position.

21. The method of claim 17 including a step of positioning a valve between said engine compression release brake and said actuator control valve;

    said step of actuating said engine compression release brake includes a step of opening said valve; and

    said step of actuating said fuel injector includes a step of closing said valve.